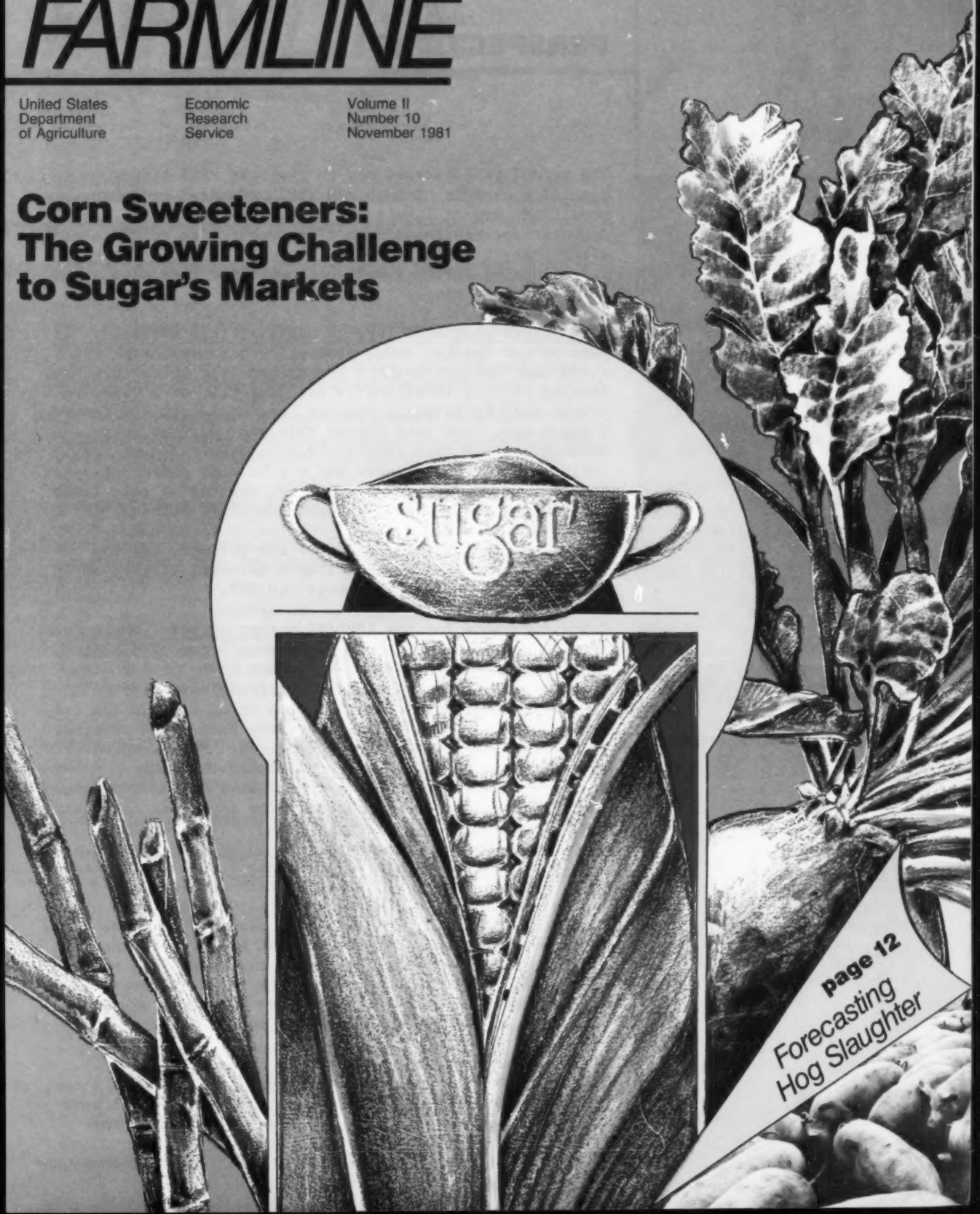
FARMLINE

United States Department of Agriculture

Economic Research Service

Volume II
Number 10
November 1981

Corn Sweeteners: The Growing Challenge to Sugar's Markets



page 12
Forecasting Hog Slaughter

Editor:
Eric Van Chantfort

Assistant Editor:
Bill Gordon

Editorial Assistant:
Martha R. Evans

(202) 447-8915

Design and Layout:
Joan Bazemore

Contents of this magazine may be reprinted without permission.

FARMLINE is published 11 times a year by USDA's Economic Research Service. Subscription price is $11 a year ($13.75 foreign). Order from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Ask for *FARMLINE* and make your check payable to Superintendent of Documents.

Address single copy requests and editorial correspondence to *FARMLINE* Room 440 GHI Bldg., USDA, Washington, D.C. 20250.

The Secretary of Agriculture has determined that the publication of this periodical is necessary in the transaction of the public business required by law of this Department. Use of funds for printing this publication has been approved by the Director of the Office of Management and Budget through January 1, 1982.

Use of commercial or trade names does not imply approval or constitute endorsement by USDA.

PERSPECTIVES

The record fall harvest now in progress will affect commodity markets through mid-1982. General economic conditions aren't likely to rescue farm prices, so many farmers face continued cash flow problems in months ahead. After that, the picture may improve if all the pieces fall into place--a stronger U.S. economy, more receptive world markets, and a closer-to-trend outlook for 1982 crops.

Farm prices stagnated through midyear, then declined. As farm prices drifted down, production expenses crept up. Since last spring, overall prices received by farmers have dropped 6% to a level nearly matching that of 2 years ago. Prices paid by farmers, however, are up nearly 20% from 2 years ago. Net farm income this year will be only modestly higher than 1980's $19.9 billion. Adjust for inflation, and the figures may not be much different. Low farm income, depressed crop prices, and higher debt loads will hurt farmers and farm input suppliers alike.

Crop production estimates, as of mid-October, put the 1981 corn crop at 22% above 1980's harvest, sorghum up 49%, soybeans up 18%, and cotton up 39%.

Price forecasts for the 1981/82 marketing year: wheat down 1¢-21¢ from last season's U.S. average price of $3.96; corn down 20¢-50¢ from $3.10; sorghum down 35¢-55¢ from $2.95; and soybeans down 61¢-$2.11 from last season's $7.61. Crop prices would fall even lower without the wheat set-aside, the opening of a new feed grain reserve, and recently improved export prospects. For farmers, marketing strategy will be more crucial than ever. Analysts aren't sure whether prices have hit bottom yet, but there will be some seasonal price increases after the harvest ends.

The livestock outlook: some improvement . . . Lower feed costs are the big plus. Also, livestock prices are likely to average higher in 1982 than they did this year, especially in the first half. Hog slaughter will be down, and lower feedlot placements suggest tighter fed beef supplies in early 1982. October 1 cattle on feed numbers were the lowest for that month since 1967. However, a slow economy and high interest rates are still squeezing producers between rising costs and weak demand.

Don't expect a quick turnaround in interest rates . . . The prime rate may edge downward some in the months ahead, but farm credit rates tend to lag, so they'll still move up--particularly longer term rates--before easing any.

FARMLINE

Volume II
Number 10

November 1981

FEATURES

Corn Sweeteners: The Growing Challenge to Sugar's Markets by *Ellen Banker* 4

Foreign competition is no longer the only worry for beet and cane producers. The bigger challenge is home-grown: Corn sweeteners are gaining steadily on sugar's markets. The bottom line is bad news for the U.S. sugar industry, says analyst Bob Barry.

A Better Way To Measure Food Costs by *Daniel R. Williamson* 6

Dollar-a-pound steak and quarter-a-loaf bread may conjure up the "good old days" to most consumers, but prices alone don't tell the story. Lloyd Teigen explains why food is a better bargain today and who gets the credit.

For Turkey Producers, Success Is a Year-Round Welcome by *Ellen Banker* 8

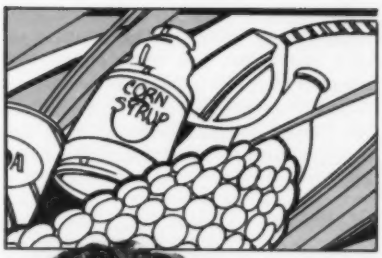
Almost half the turkey Americans eat is still gobbled up during the fall holiday season, but turkey is now competing year-round in markets traditionally dominated by other meats.

Canada Sets Its Sights on Export Expansion by *Barry Murray* 10

U.S. farmers aren't the only North Americans who see an opportunity in the world's growing demand for grains and oilseeds. Canadian farmers are competing in several markets, although they face some big obstacles to significant export expansion.

Hog Slaughter: Be Your Own Forecaster by *Patricia F. Singer* 12

Statistician Ralph Gann explains how to use USDA reports to make your own forecasts of hog slaughter. It's no guarantee you'll be able to predict prices, but it's better than letting current prices set your future production and marketing plans.



DEPARTMENTS

Perspectives: Late Breaking Agricultural News and Analysis 2

Agricultural Roundup: The Modern Turkey; A Shrinking Minority 9

Reports in the News: Why Some Farms Fare Better; Size vs. Efficiency 17

Farmline Trends: Monthly Price Monitor; the Import Side of U.S. Trade 18

Corn Sweeteners: The Growing Challenge to Sugar's Markets

America's "sweet tooth" has been more demanding than ever in recent years, but this news brings little cheer to beet and cane sugar producers. They're caught in a double-bind, with stiff foreign competition on one side and a home-grown corn product on the other.

Of the two, the bigger challenge probably comes from the corn product, high fructose corn syrup. HFCS has been a major success since it was commercially introduced in the U.S. in 1967.

In 1970, per capita consumption of HFCS was only seven-tenths of a pound per year. It rose steadily to 19.1 pounds in 1980 and an estimated 23 pounds in 1981. Meanwhile, consumption of refined sugar declined from 101.7 pounds per capita to less than 80 pounds today.

For sugar producers, these figures are cause for concern. Sugar wasn't able to hold its own even in a market expanding faster than the population, and that market may not be growing as rapidly in years ahead.

The average American now consumes almost 126 pounds of sugar and sweeteners a year. That's a staggering 35 teaspoons a day—most of it (75 percent) in baked goods, soft drinks, and other processed foods.

These numbers are among the highest in our history (the peak was in 1979 at 127.5 pounds). Ten years ago, we averaged only about 124 pounds a year. But our use of sweeteners appears to have stabilized, and by 1985, Americans will probably add only another half-pound of sugar and sweeteners to their diets, according to USDA economist Bob Barry.

"Greater health consciousness, attention to diet, and a smaller portion of the population in the sugar-craving ages of 10 to 25 years are the reasons," he says.

According to Barry, corn sweeteners (including glucose, corn syrup, dextrose, but mostly HFCS) now account for about one-third of total domestic sugar/sweetener use, up from 16.7 percent 10 years ago. And, largely because of the anticipated increase in HFCS use, forecasters say that this figure could rise to about 43 percent of the market by 1985.

This is bad news for sugar producers and processors. "The bottom line will be a reduction in the overall size of the sugar industry," Barry says.

On the other hand, present technology probably can't take corn sweeteners much further than a 50-percent share, leaving half the total market to traditional sugar.

Sugar's Bittersweet Problems

Corn sweeteners have been steadily gaining on sugar's markets for one major reason: cost. It costs only half as much to make HFCS from corn as it takes to make sugar from cane or beets.

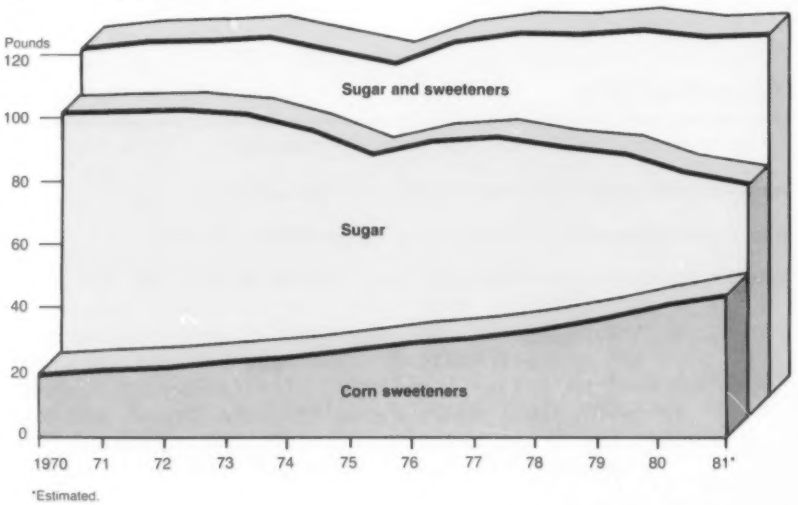
Corn sweeteners now account for about one-third of total domestic sugar/sweetener use, up from 17 percent 10 years ago.

Plus, we grow all the corn we need right here in the U.S. Although energy costs in the corn wet-milling process are high, the corn itself is the single most expensive input, and corn prices (adjusted for inflation) have been reasonably stable over the last decade.

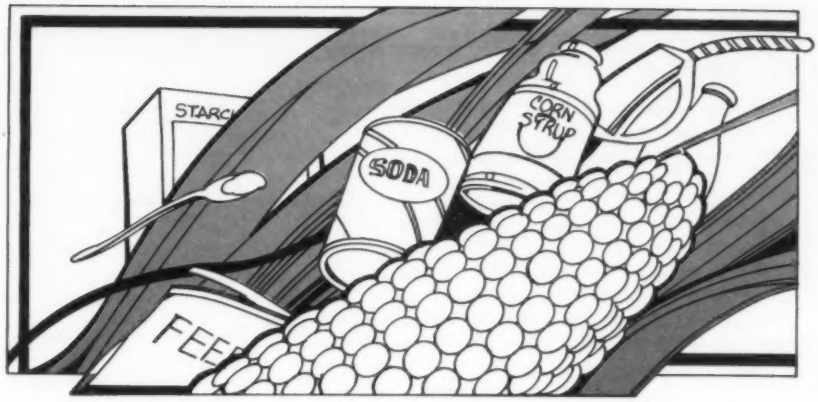
For the sugar industry, it's another story. Only about half the cane and beets we process into sugar are grown domestically. The rest are imported, mostly from Latin America.

Corn Sweeteners Cut Into Sugar's Markets

Annual per capita consumption:



*Estimated.



Because the governments of most exporting countries have lower environmental and safety standards, much lower or no minimum wage laws, and subsidies for their cane and beet growers, prices on the world market are sometimes substantially lower than domestic prices. This is especially true during periods of sugar gluts.

A prime example is the European Community—the most highly protected agriculture in the world—which is currently estimated to have an export surplus for 1981/82 of almost 4 to 5 million tons.

This creates a lot of instability in the American industry. While U.S. producers may want to sell as much sugar as possible and reduce imports, most refiners want to buy the cheapest sugar they can whether at home or abroad.

So, producers are looking to the government for protection. Specifically, the growers want a government-guaranteed program of loans with sugar as collateral, which, in effect, would provide a minimum domestic price level for sugar.

But many refiners see it differently. They say the major impact of government loans would be much higher domestic prices to consumers and much smaller domestic sugar consumption in the long run.

Higher world prices would be self-defeating according to refiners because sugar users might switch even more quickly to the alternative: corn sweeteners.

The Alternative: Corn

Some sugar refiners aren't taking any chances with the shaky sugar situation and have diversified into other businesses, including some processing of corn syrup.

For processors who are wet-milling corn, the time is right. Through 1980, the industry expanded its production. And the development of the new HFCS 55-percent-fructose-content product, high sugar prices, and last year's decision by major soft drink companies to replace some of the sugar in their products with HFCS has further improved the industry's outlook. The word is expansion, and the industry can handle it.

There are currently 26 corn wet-milling plants operating, or soon to be operating, in the U.S. Seventeen have been built just since 1960. All of the plants are modern facilities, ready to process corn efficiently. And, according to Barry, HFCS capacity is expected to expand by 75 to 80 percent between 1980 and 1985.

"Wet-milling corn has many benefits," Barry says. "Diversity is the most obvious." Wet-milled corn can be used in five major product categories: starches, corn syrups, dextrose, HFCS, and corn byproducts such as corn gluten feed, meal, and corn oil. Some processors are interested in adding a sixth—ethanol.

"It's a complex, multi-faceted industry, selling products to food, beverage, livestock feeding, and many other industries," says Barry. "Corn byproducts alone account for about 20 percent of the value of one bushel of wet-milled corn."

Does the country produce enough corn to satisfy the sweetener industry's growing needs without cutting into livestock feed supplies?

"Yes. Right now, we expect the 1981 crop to be a record, and the sweetener market may take about 4 or 5 percent of it. By 1985, usage should be up to 6 percent. Supplies should not be a problem in the foreseeable future," Barry says.

But he adds that corn sweeteners can't do everything sugar can do. While HFCS is as sweet as sugar in many uses, some ice cream manufacturers will stick with sugar because it freezes at a slightly higher temperature than corn sweeteners. Bakers will probably use sugar in cakes and similar products because HFCS turns brown when baked.

However, the real problem for cane and beet producers will be on the table. In the short term, foreign producers are trying to fill U.S. sugar bowls. In the long run, corn sweeteners may join that competition if technology finds an inexpensive way to crystalize the product (researchers are working on doing just that). □

A Better Way To Measure Food Costs

The nickel beer, quarter-a-loaf bread, and dollar-a-pound steak may sound like reminders of the "good old days," but the fact is that food is a much better bargain today.

While retail food prices are more than four times higher than a half century ago, the average worker's paycheck is more than 11 times higher.

As a result, the typical wage-earner worked only 61 minutes in 1980 to buy the same basket of foods that required almost 2 hours work in 1929, says USDA economist Lloyd Teigen.

These figures don't mean that food is getting "cheaper" every year—even in terms of hours worked. That same food basket that took 61 minutes of work in 1980 required a minute less in 1967. The reason: grocery store prices rose 155 percent, while hourly wages rose only 151 percent.

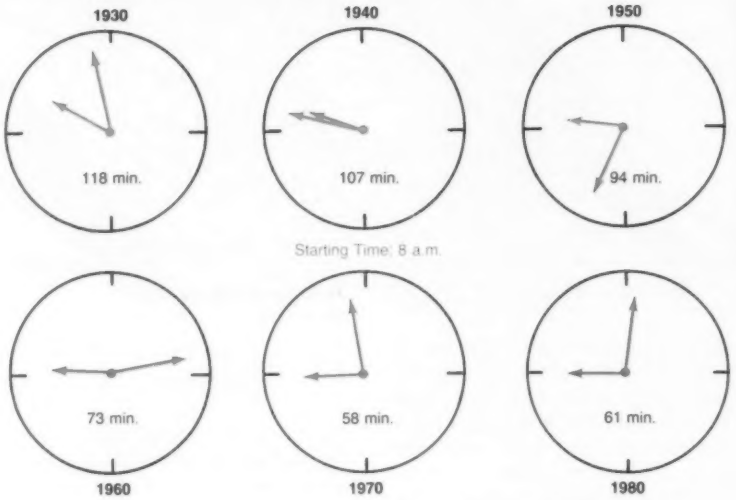
But economists say that food price rises have been relatively modest compared with other prices in the economy. For example, food prices more than doubled during the 1970's, while fuel prices more than tripled, based on the consumer price index (CPI).

A better way to measure the "real cost" of food to consumers, Teigen says, is to take into account the growth in after-tax income of each breadwinner (personal disposable income). To do this, Teigen devised an index which compares food prices to disposable personal income per member of the labor force.

This translates the price of beefsteak into an index of work time, while comparisons based on the CPI can only express the price of beefsteak as so many units of other consumer goods.

Besides adjusting for inflation, Teigen's index separates the growth in family income from the trend in recent years of more family members going to work. In other words, this index prices food in terms of a proportion of working time required, or leisure given up.

The Average Wage Earner of 1930 Worked Nearly Twice as Long to Buy the Same Amount of Food[1]



[1]Based on average annual income and the cost for a comparable "basket" of foods representing average quantities purchased by urban wage earners in 1967 from 1 hour's work.

Using the Index

By this yardstick, food costs fell more than 2.5 percent annually from 1947 to 1972, then shot up 11 percent from 1972 to 1974. Since then, the index has stayed on a plateau which has seen year-to-year variations of less than 3 percent.

Using the CPI's standard market basket of food—a widely used measure of food price movement—let's examine Teigen's food price indexes for the items in that standard basket (see table).

The index fell from almost 180 points in 1940 to less than 95 points in the early 1970's, just before farm prices boomed. Last year, the index hit 101.2. In other words, food costs were far higher in 1940.

Peeking into the basket, some items are better bargains than others in real price terms.

From 1940 to 1980, food costs fell:

- About 37.6 percent for all meats.
- Around 79.5 percent for poultry.
- 55 percent for dairy products.
- 64.7 percent for margarine.
- 55.8 percent for processed fruits and vegetables.
- For cereals and baked goods, about 48 percent.
- For sugar, 34.2 percent.

What is the likelihood that food prices will stay at such relatively modest levels in future years? The answer depends greatly on the parts of the food chain that are between farmers and consumers.

"Where the assembly, processing, and distribution components of the food system are relatively competitive," Teigen says, "there is a strong likelihood that farm productivity gains will be translated into lower consumer prices."

That "middleman" segment was where much of the food price surge of the early

The "middleman" segment between farmer and consumer was where much of the food price surge of the early 1970's occurred.

1970's occurred, Teigen says, after the economy was shaken by wage and price controls and the OPEC oil embargo.

As the CPI soared, personal disposable income gains slowed at the same time commodity prices rose, forcing the sharp jump in Teigen's food price index.

Rising energy costs and slowing labor productivity growth in many food processing and distribution industries boosted food prices after the products left the farm.

Productivity Holds Down Costs

The increases could have been much higher—historically, as well as in recent years—except for gains in productivity on the farm and—until the mid-1970's—in the food system.

In fact, Americans still spend a far smaller portion of personal income on food—16 percent last year—than any other people. The proportion varies considerably worldwide: 27.5 percent in Britain, 62.5 percent in India, 59.3 percent in Sierra Leone (West Africa), and 45 percent in the USSR.

Technology has been the key, enabling farmers to keep up with production costs in most years by squeezing more and more output from their farms.

Substitution of machines and chemicals for labor is one way that technology has increased productivity. In 1944, the farm workforce totaled 10.2 million, compared with 3.8 million in 1979.

During that period, use of agricultural chemicals increased 36-fold—a 10-percent annual gain—and the use of tractors doubled while tractor horsepower increased more than 4¼ times.

Meanwhile, farmers were squeezing more production than ever from their fields. For instance, the average U.S. corn yield was 33 bushels per acre in 1944. The 1981 yield could be 107 bushels per acre, according to September estimates.

While yields increased dramatically, overall variable costs per unit of production also rose. For instance, it cost $1.10 to produce a bushel of corn in 1974—the first year of USDA's cost of production survey—compared with $2.36 last year.

Help for Farmers

Although consumers benefit from such productivity gains, some savings stay on the farm.

"Increased productivity boosted total farm output and output per farm enough to enable net income per farm to double in real terms over the last 25 years," Teigen says.

In 1930, net income per farm was $1,041 in 1967 dollars—a measure that disallows gains due to inflation. The figure rose to $3,029 in 1955, and $6,104 in 1979.

Total net farm income—in 1967 constant dollars—made solid gains, at least until last year: $6.9 billion average in 1930-1934, to $14.1 billion in 1955, to $14.2 billion in 1979. The best year, Teigen notes, was 1973, when net farm income topped $25 billion in 1967 dollars before falling to $17.7 billion the next year.

Last year's $20 billion net farm income represented a relatively meager $8.1 billion in 1967 dollars, by far the worst showing in many years, and this year may be no better. □

Today's Food Costs Compare Well With "Good Old Days"[1]

	1940	1950	1960	1970	1980
			1967=100		
Total food	177.8	156.2	122.4	96.3	101.2
Cereals and bakery products	166.4	139.4	121.1	91.3	98.0
Margarine	281.3	209.6	123.2	88.9	99.3
Sugar and sweets	206.1	158.9	125.3	96.5	135.7
Nonalcoholic beverages	—	181.8	127.3	98.4	157.4
Fresh fruits and vegetables	147.0	146.3	122.8	95.1	100.4
Processed fruits and vegetables	218.2	156.8	139.9	91.1	96.4
Meats	158.6	168.3	121.3	98.6	98.9
Beef and veal	167.7	179.9	128.1	100.2	107.5
Pork	152.5	160.4	113.6	97.1	83.1
Poultry	370.2	297.3	148.7	90.9	75.9
Fish	132.3	153.2	118.2	98.9	131.3
Dairy products	201.0	152.2	122.9	93.7	90.4
Eggs	323.2	248.2	157.4	118.0	67.5

[1]Consumer Price Index relative to after-tax income per member of the labor force.

For Turkey Producers, Success Is a Year-Round Welcome

Turkey farmers promote their product as a meat for all seasons, but the fall holidays still have a special meaning to them. This is their best time of year.

Almost half of the turkey Americans eat is gobbled up between October and December. And peak demand often means peak prices. In 5 of the last 6 years, U.S. average prices received by turkey producers hit their annual highs in November or December.

Producers want to change the seasonal notion Americans have about turkey and help boost income year round.

"Our goal is for consumers to treat turkey as they would any other meat," says Lew Walts of the National Turkey Federation. The federation and several other industry groups have been running campaigns to get consumers to buy their product throughout the year.

Success has been slow, but steady. Turkey consumption increased an average of 5 percent a year during the 1970's, faster than the increase in population.

"We are definitely eating more turkey," says USDA economist Allen Baker. "Back in 1940, an average American ate just short of 3 pounds a year, less than a third of what we eat today." Even 10 years ago, we ate only 8 pounds each. But, by 1980, per capita consumption reached 10.5 pounds. This year consumption is expected to remain just about the same.

Finding New Markets

"In coming years, when turkey is more widely used in different kinds of products, we can expect the consumption figures to increase," Walts says. With the advent of turkey ham, franks, and bologna, turkey is now competing in markets traditionally dominated by other meats.

Turkey is attractive to processors because of price. It's cheaper than competing meats. Per pound, food processors usually pay around 46 percent more for beef and 34 percent more for pork.

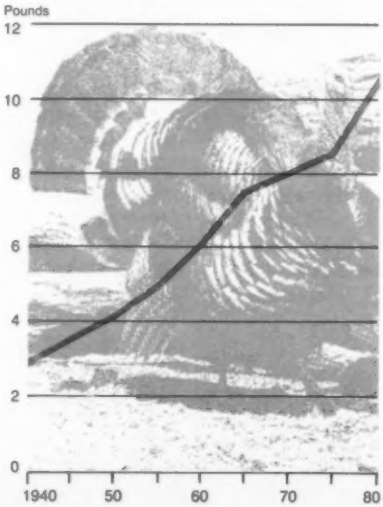
But, processed products such as luncheon meats and hot dogs are just one side of turkey's "second industry." Fresh cut-up parts are another. "Turkey parts are relative newcomers to meat counters," Walts says. But consumer acceptance has apparently been encouraging. One east coast grocery chain reports sales of fresh and frozen turkey breasts more than doubling in the last decade.

"In the last 5 years, we've seen tremendous growth in these secondary areas," Walts says. "In fact, only about half the turkeys marketed today are whole and two-fifths of those have been processed in some way that makes cooking easier, such as prebasted birds.

"Five years ago, only about 35 to 40 percent of the turkey crop went to the cut-up and processed markets. In 1981, we can expect to use almost half of the crop for this purpose," Walts says.

Eating More Turkey

U.S. per capita consumption:



The success in selling consumers on turkey's other uses stems partly from the efforts of producers, breeders, and scientists to improve the flock.

"Modern birds have been bred for thick thighs and meaty drumsticks," Walts says. "In fact, the average dress-out weight (the actual meat from the bird) is around 80 percent of the total weight. (Consider the dress-out rate for a steer at only 46 percent.) This meat-to-bone ratio makes turkey a particularly good buy at the retail counter.

Another reason for increased turkey sales is the price relationship with beef and pork. As these two rise, turkey sales increase.

The retail price, however, is hard to forecast. Economists have noted that retail prices for turkey don't respond predictably to such normally strong indicators as supplies, consumer incomes, and prices of competing meats.

However, some economists are betting that this year's holiday prices will be below those of last year. "On the wholesale level, prices for young hen turkeys in New York may average 70 to 73 cents per pound, compared with last year's 73 cents," Baker says. But, he adds, "Retail prices can vary widely due to competition and store 'specials,' especially during the holidays." □

AGRICULTURAL ROUNDUP

A Bird of a Different Feather

The turkey that graces today's tables is a bird of a dramatically different feather from the one the Pilgrims stalked in the forests. The colorful birds that come to mind are virtually gone from domestic production, replaced by a species with snow-white feathers.

"The dark feathers of the old-fashioned birds also caused a dark pigment in the skin," says Lew Walts of the National Turkey Federation. "The dark color really didn't enhance consumer acceptance of the meat, so scientists bred color out of the bird."

Commercial turkey production in the U.S. dates back to the 1920's, when domestic turkeys were few and expensive. These early birds were bred with an eye toward perfect plumage, rather than the quality of their meat. But, by the end of the 1930's, the emphasis shifted—from colorful feathers to taste.

In the 1940's, USDA researchers produced the "Beltsville White," a broad-breasted smaller bird, just right for the family table.

Other similar strains were developed and, with advances in disease control and production methods, the turkey industry entered the modern age.

Today, individual growers produce turkeys by the thousands. The snow-white birds are scientifically nurtured in precisely controlled environments. From artificial incubation to the truck trip to the processing plant, they are secluded from any influences of the outside world.

This year, North Carolina will become the largest turkey producing state, with an expected 26 million birds raised, 9 percent above 1980. Minnesota, the long-time largest producer, will slip to second with an estimated 25.2 million, down 1 percent from last year. California is third, followed by Arkansas and Missouri. These five states will produce almost 68 percent of the total 1981 U.S. turkey crop.

Overall, this year's crop will be up slightly, by about 2 percent, from 1980's crop. This is a record number of birds—about 168 million—going to the block.

A Shrinking Minority

In the days of Model-T Fords and steam-powered threshing machines, farm living was a major part of the American lifestyle. Nearly one out of every three Americans lived on farms in 1920. Today, it's only about three out of 100.

Although the rate of decline in the farm population slackened off in the 1970's, people are still leaving the farm faster than they're being replaced. From 1978 to 1980, the number of farm residents fell by 450,000 to about 6 million.

Also, farm residents no longer make up the majority of the agricultural work force of farm operators, family members, and hired employees. Only 47 percent of the 3.5 million people working in agriculture in 1980 lived on farms. Fifty years ago, 87 percent lived on farms.

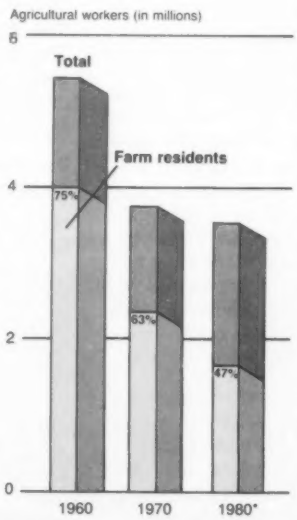
Wage and salary farm workers, in particular, are more likely to live in towns and cities than they did in the past. In 1980, about 8 out of 10 agricultural employees lived off the farm.

Of course, farm residents as a group are more likely to work in agriculture than other industries. However, more men are employed on the farm full-time, while working farm women most often take nonagricultural jobs. When working off the farm, men usually go into manufacturing, while women take service jobs.

The farm population has a lower proportion of blacks than the nonfarm population. Last year, 4 percent of all farm residents were black, compared with 12 percent of the nonfarm population. Only 1 percent of all blacks lived on farms, down from about half the black population in 1920.

In 1980, nearly half the farm population lived in the north central states. The south, which ranked first until 1965, had 36 percent of the total. The west held 12 percent, while the northeast had 7 percent.

Less Than Half of Agricultural Workers Now Live on Farms



*Based on new definition of a farm.

A Choice Between Food and Feed?

Does America's appetite for meat bite into the meager food supplies of the world's hungry?

Some critics charge that meat consumption wastes grain that could otherwise feed hungry people. But USDA experts say that even if Americans forego meat, the sacrifice would likely provide very little more food to the world's needy.

The idea of going without meat—or at least grain-fed livestock—is based largely on the high grain to meat conversion ratio. For example, more than 6 pounds of grain are used in feedlot confinement for each pound of beef added.

This year, around 453 million metric tons of coarse grain and 85 million metric tons of wheat are expected to be used as animal feed—about half of it in developed countries, and another third in communist countries.

What would happen if the grain used in developed countries as feed—about 245 million tons—was transferred to developing countries?

"Developing countries' food use of grains would grow by 65 percent," says USDA economist Donnel O'Flynn. "Their annual per capita cereal consumption could, in theory, grow from a current 408 pounds to about 661 pounds—a major improvement in the diet."

But, O'Flynn cautions, it's not nearly so simple as that.

"The reason that so much of the world's grain goes to livestock today is that consumers in wealthier nations can afford to pay for it. If their demand for livestock products fell off, prices would plummet and feed grain production would decrease accordingly. Relatively little benefit would go to the poor."

The appeal of meat is hardly confined to wealthier nations. In fact, since 1960, meat consumption has grown 7.3 percent a year in developing countries, compared with 1.4 percent in developed nations, and many developing countries are, by policy, trying to increase their meat consumption.

Canada Sets Its Sights On Export Expansion

Farmers here aren't the only North Americans who see an opportunity in the world's growing demand for grains and oilseeds. Canadian farmers hope to benefit, too.

Although total Canadian agricultural exports—estimated at $7 billion in the 1980/81 marketing year—were considerably less than the $40 billion sold by the U.S. in fiscal 1980, Canada is consistently a major exporter of grains and oilseeds.

"The two are strong competitors in exports of these commodities, with the U.S. ranking number one in the world and Canada number two," says USDA economist Pat Weisgerber. But rapid growth in market demand has enabled both nations to record steady increases in sales volume.

U.S. exports accounted for about 58 percent of all grains and oilseed traded worldwide last year, up from 51 percent during the mid-1970's. Over the same period, our total grain and oilseed export volume jumped from 92 million tons to 145 million.

Meanwhile, Canada's grain and oilseed export volume rose from an average 18.9 million tons in the mid-1970's to 21.8 million last year. Canada's share of total world trade remained unchanged at 9 percent.

Wheat currently accounts for around one-half of all Canadian overseas farm sales. Canadian durum wheat is considered to be very high quality, and in demand on the world market for noodles and pasta. It has better milling quality and contains more protein than most U.S. wheat because of more favorable growing conditions.

In the 1980/81 marketing year, Canada exported nearly 16 million tons of wheat and wheat flour, compared with 42 million tons for the U.S. A decade earlier, Canadian wheat sales totaled 11 million tons and the U.S. sold 20 million.

Last year, the leading purchasers of Canadian wheat were the USSR, China, and Japan, also major markets for U.S. wheat.

In 1980/81, the Canadians sold 4 million tons of wheat to the USSR, while U.S. sales totaled 3 million tons. Canadian farmers also sold 2.8 million tons of wheat to China, compared with 8.8 million tons by the U.S., and 1.4 million tons to Japan versus the U.S. total of 3.5 million. Other major markets for Canadian wheat were Britain and Brazil.

Canada is not a major exporter of corn, but other feed grains they export do provide some competition for U.S. feed grains. Canadian barley exports totaled 3.2 million tons in 1980/81, compared with 1.7 million tons for the U.S.

In some markets, Canadian barley exports compete directly with U.S. corn. The leading buyers were the USSR, Japan, and Italy. All are traditionally large purchasers of both U.S. corn and barley.

Canada is also the world's largest exporter of rapeseed and rapeseed meal and oil. Rapeseed competes with U.S. soybeans in some overseas markets. Japan and the European Community are leading oilseed customers of both countries.

Long-Term Agreements

Most Canadian grain exports are marketed through the Canadian Wheat Board. This centralized governmental agency relies heavily on long-term sales agreements with many of its customers, a practice the U.S. follows to a more limited extent. This marketing policy has helped Canada secure more stable export levels to its larger markets. It has also enabled Canada to encourage expansion in agricultural production with relative assurance of sales outlets, says USDA economist Ron Trostle.

In June 1981, the Canadians signed a new agreement with the USSR calling for the sale of at least 25 million tons of grain over the next 5 years. The pact assures the sale of at least 4 million tons of Canadian wheat and feed grains in the year ending July 31, 1982. Shipments will increase by a half million tons annually until they reach 6 million tons by 1985.

Canada's transportation system hasn't kept pace with the development of agricultural exports.

In addition, Canada's 3-year grain agreement with China provides for the sale of about 2.8 million tons of wheat each year. A 3-year agreement with Poland calls for the sale of 1 to 1.5 million tons of grain per year. Japan has been buying 1.3 million tons of wheat a year under an annually renewed agreement, and a 2-year agreement with Mexico provides for average shipments of 250,000 tons of grain per year.

Canada will probably negotiate long-term agreements with more countries in the future, particularly to provide more stable markets for rapeseed.

Obstacles to Growth

"The Canadian acreage devoted to grain and oilseed production has grown more than 10 percent over the last 30 years," Trostle says. "The growth rate has averaged 350,000 acres per year." U.S. crop acreage is about the same as it was in 1950.

But Canada's agricultural production is limited by its location.

"When the final line had been established to mark the boundary between Canada and the U.S. in 1870, Canada had retained only the northern fringe of North America's temperate zone," says analyst Nina Swann.

"Climate and soils severely limit the amount of land suitable for commercial agriculture in Canada. Consequently, the agriculture of the U.S. overshadows that of Canada," Swann says.

Another obstacle affecting the amount of farm products exported by Canada is

the country's transportation system, which hasn't kept pace with export development in the agricultural sector. This has caused some sales contracts to be canceled or deferred in the wake of shipping bottlenecks.

For example, in 1977 and 1978, an estimated $1 billion (Canadian) was lost to farmers when transportation difficulties forced delays in shipments.

"Most of Canada's grain production areas are located farther from seaports than is the case in the U.S.," Trostle says. "Whereas U.S. exports take advantage of major waterways, Canada has to rely heavily on long-distance railroad connections to grain terminals."

Thirty-Year-Old Boxcars

The country's railroad network has also been in disarray. Severe railcar shortages and grain scheduling problems have plagued Canadian farmers.

In recent years, Canadian railroads relied mainly on 30-year-old boxcars with limited grain capacity of 50 to 60 tons per car. This contrasts with the 100-ton capacity jumbo hopper cars which transport most U.S. grain.

The Canadian government has pledged to improve the grain transportation system, with the goal of increasing grain and oilseed exports to a level of 30 million tons by 1985. The government has begun to replace the outdated boxcars with new hopper cars and is also carrying out a boxcar rehabilitation program. This will further expand the country's grain-moving capabilities.

Trostle notes that another problem with grain transportation in Canada is a system of statutory freight rates.

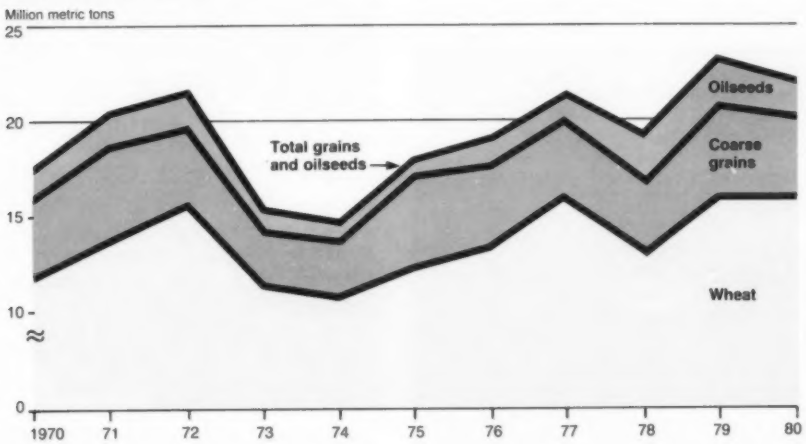
An 1897 agreement between the Canadian railroads and the federal government set these rates charged for moving grain. As transportation costs have increased during this century, the Canadian government has chosen to subsidize rail companies instead of abolishing or raising the rates.

However, the subsidies are not enough to cover the actual cost of transporting these commodities. Since railroads lose money on grain shipments, they are unwilling to invest in expansion of grain transportation facilities, and in many cases focus their resources on moving more profitable commodities, such as minerals, Trostle says.

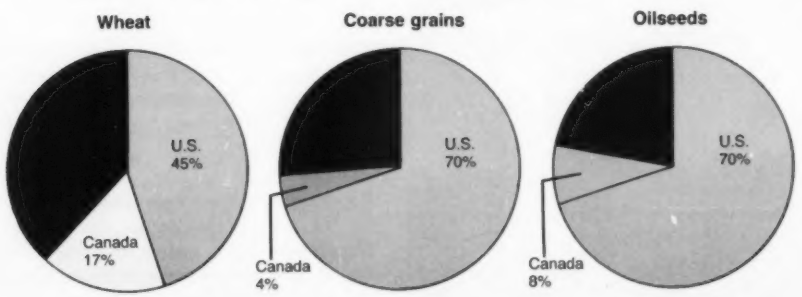
The statutory rates have been maintained in order to keep the price of Canadian grain and oilseeds competitive on world markets. However, Canadian farmers now realize that these rates may actually hinder their long-run ability to expand exports and many are now pushing for some form of increased economic incentives for the railroads.

Despite the problems with Canadian agriculture, Trostle contends that during the 1980's that country's agricultural exports will continue to expand, and will enable it to at least maintain its current share of the world market. □

Canadian Grain and Oilseed Exports Have Risen Sharply Since the Mid-1970's



. . . But the U.S. Holds A Far Greater Share of World Markets



Shares of total world exports, 1980.

Hog Slaughter: Be Your Own Forecaster

Like anyone else with a commodity to sell, hog producers sometimes let current prices determine their future production and marketing plans. Too often, that means doing the wrong thing at the wrong time.

While no one has come up with a system to ensure the right decisions, farm analysts say you'll probably do better in the long run by looking ahead. USDA's *Hogs and Pigs* reports, issued by the Crop Reporting Board, are designed to help.

The reports are published four times a year, but the June and December reports are of special interest. You can use them, with the information presented here, to forecast commercial slaughter for the next 6 months and the next 12.

By combining these forecasts with other information on developments likely to affect slaughter supplies and hog prices, you'll be in a better position to consider any adjustments in your operation, according to USDA statistician Ralph Gann.

To formulate forecasts, you need three figures: the inventory of market hogs, the pig crop from the last 6 months, and pig crop intentions for the next 6 months. These three totals are indicated on the accompanying table, which is taken from the June 1981 *Hogs and Pigs* report.

Hogs and Pigs: Inventory Number, June 1 and December 1, Sows Farrowing and Pig Crop, 1979-81, United States (excerpted from the June 22, 1981, *Hogs and Pigs* report)

	1979	1980	1981	1981 as % of 1979	1981 as % of 1980
	1,000 head			*percent*	
Inventory number—June 1					
All hogs and pigs	65,020	65,255	59,740	92	92
Kept for breeding	10,368	9,481	8,355	81	88
Market	54,652	55,774	51,385*	94	92
Market hogs and pigs by weight groups:					
Under 60 pounds	25,223	25,002	23,072	91	92
60-119 pounds	13,186	13,550	12,205	93	90
120-179 pounds	9,197	9,781	9,040	98	92
180 pounds and over	7,046	7,441	7,068	100	95
(Inventory and weight group figures for December 1, which appear in the June and December Hogs and Pigs *reports, are deleted here. Selected figures on sows farrowing, the pig crop, and pigs per litter are also deleted here).*					
Sows farrowing:					
December[1]-May	7,179	7,231	6,441	90	89
June-November	7,306	6,831	6,048[2]	83	89
Pig crop:					
December[1]-May	50,571	52,302	47,567	94	91
June-November	52,120	49,260	43,546[2]	84	88
Pigs per litter:					
December[1]-May	7.04	7.23	7.39	105	102
June-November	7.13	7.21	7.20	101	100

Chart A, Chart C, Chart D

[1]December preceding year. [2]Intentions. [3]Average number of pigs per litter with allowance for trend used to compute indicated June-November pig crop.

*When forecasting slaughter based on the December report, use the December 1 market hog inventory figure with chart B, rather than the June 1 figure circled here for chart A.

Besides the three figures, you need the four charts presented here (see pages 13 and 14). All four illustrate past relationships. These patterns of the past are the key to likely slaughter in the future, Gann says.

Charts A and B are both based on the inventory of market hogs and can be used for 7-month slaughter forecasts. Chart A shows how the June 1 inventory has related to June-December commercial slaughter over the past decade. Chart B shows the relationship of the December 1 inventory to upcoming December-June slaughter.

Charts C and D are both based on the pig crop and can be used to make slaughter forecasts for the following 6 months and for the period 7-12 months ahead. Chart C illustrates the relationship of the December-May pig crop to July-December slaughter; chart D the relationship of the June-November pig crop to January-June slaughter.

According to Gann, the average relationships plotted in the charts change gradually over time. Thus, you should be able to use these same charts following each June and December *Hogs and Pigs* report for the next 2 or 3 years. The closer the actual slaughter relationships of the future conform to the patterns of the past, the less often the charts require updating.

We'll take the June 1981 *Hogs and Pigs* report as an example to show how you could have used it when it was published to forecast hog slaughter for the rest of 1981 and for January-June 1982.

You can apply these same techniques to subsequent reports. The next report will be issued on December 22 and can be used to forecast hog slaughter throughout 1982.

Forecasting a Half-Year Ahead

To forecast slaughter for June-December 1981 based on the June report, you would have followed these

steps (which are illustrated on chart A with a dashed line):

1) Check the accompanying table for the June 1 market inventory—51,385,000, or about 51.4 million head—and locate where this figure would be on the bottom horizontal grid of chart A. (When the December report is issued, you can forecast slaughter for December 1981-June 1982 by using the December 1 market inventory and chart B).

2) From this spot on the bottom grid, draw a straight line up to the colored diagonal bar.

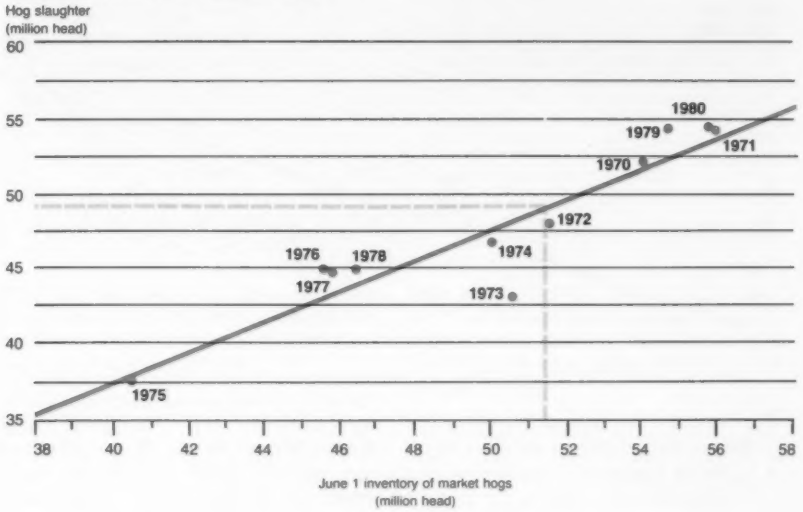
3) From there, draw another straight line to the numbers at the far left of the chart. You should have landed near 49.1, as the dashed line indicates. However, since the black dots for the last 5 years were all above the diagonal line, you would probably want to adjust your forecast upward slightly.

Because hog slaughter shows some seasonal variations, you should compare your forecasts with slaughter figures for the *same period* of the previous year or last few years. Even then, before any assumptions can be made about the direction of prices due to larger or smaller slaughter prospects, other factors must be considered, such as supplies of competing meats and the state of the economy in the current and previous year.

Despite all the uncertainties, a slaughter forecast is still an important guide, and the market hog inventory isn't the only way to project slaughter. Because most hogs are marketed 5 to 7 months after birth, July-December slaughter can also be forecast another way.

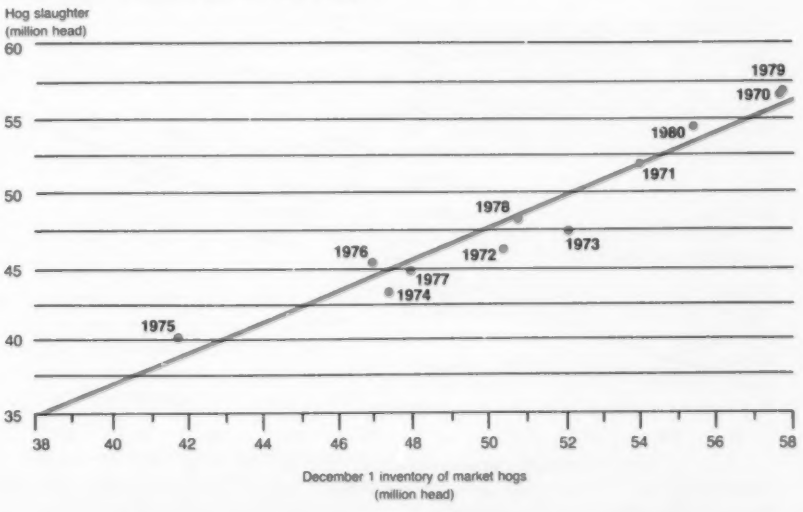
Use chart C and the December-May pig crop total, which includes all pigs born in the preceding half-year. Again, the past relationship of the pig crop to slaughter is used to forecast the future.

Chart A: **Forecasting June-December Slaughter Based on the June 1 Inventory of Market Hogs**[1]



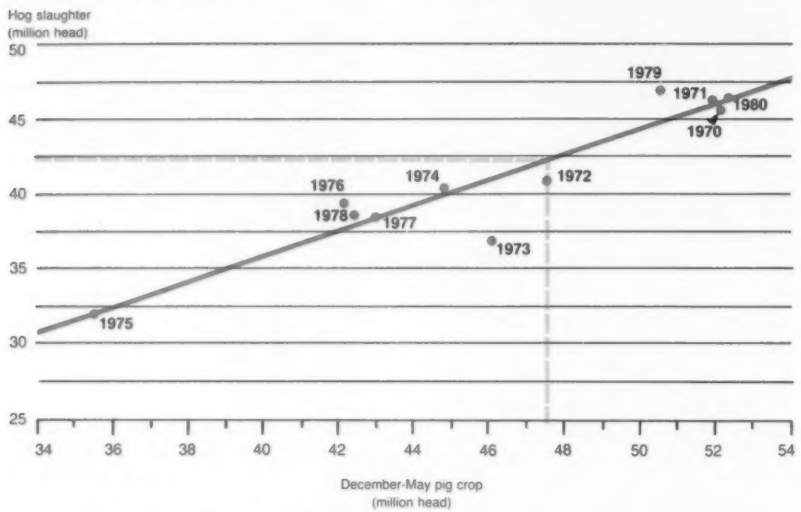
[1]Use this chart with the June 1 market hog inventory figures from the June *Hogs and Pigs* report to forecast slaughter during the June-Dec. period following the report.

Chart B: **Forecasting December-June Slaughter Based on the December 1 Inventory of Market Hogs**[1]



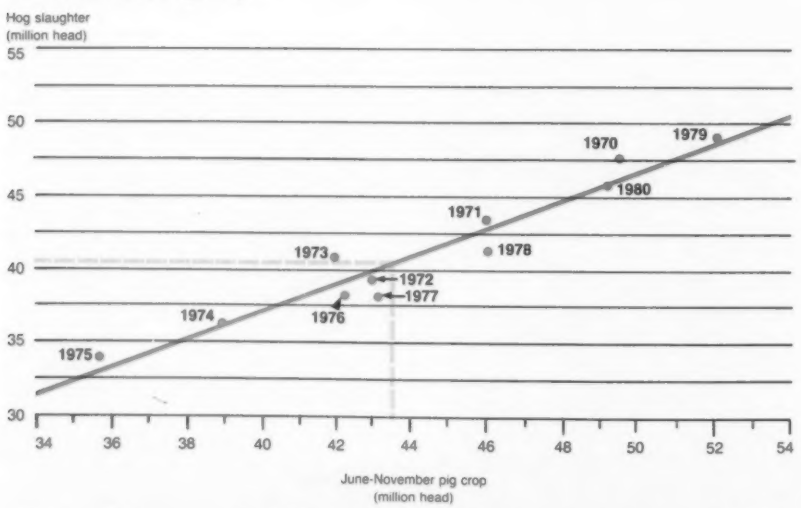
[1]Use this chart with the Dec. 1 market hog inventory figures from the December *Hogs and Pigs* report to forecast slaughter during the Dec.-June period following the report.

Chart C: **Forecasting July-December Slaughter Based on the December-May Pig Crop**[1]



[1]Use this chart with Dec.-May pig crop figures from the June *Hogs and Pigs* report to forecast slaughter during the July-Dec. period following the report. Use this chart with the Dec.-May pig crop projected in the December *Hogs and Pigs* report to forecast slaughter during the July-Dec. period 7-12 months ahead.

Chart D: **Forecasting January-June Slaughter Based on the June-November Pig Crop**[1]



[1]Use this chart with June-Nov. pig crop figures from the December *Hogs and Pigs* report to forecast slaughter during the Jan.-June period following the report. Use this chart with the June-Nov. pig crop projected in the June *Hogs and Pigs* report to forecast slaughter during the Jan.-June period 7-12 months ahead.

You begin by locating the December-May pig crop total—about 47.6 million from the June table—along the bottom grid of chart C. From there, you follow the same steps—illustrated by the dashed line—as with chart A. (When you get the December report, you can forecast slaughter for January-June 1982 using the June-November pig crop figure along with chart D).

Notice that the chart C forecast—around 42.5 million head—is lower than the chart A outcome. The reason is that the chart A forecast is for the 7-month period from June to December, while the chart B forecast covers only 6 months—July to December.

Either or both of the two forecasts can be used to provide reasonably reliable indications of slaughter through the end of the year, assuming that history repeats itself. Statistician Gann says that the average discrepancy between forecasts obtained from the charting procedure and actual slaughter has been less than 5 percent over the last 11 years.

Use Judgment, Too

But what if history doesn't repeat itself? And, why, on all charts, are most of the dots not on the diagonal bars?

Although the diagonals represent the average relationship between market hogs or pig crops and commercial hog slaughter since 1970, the dots represent actual year-by-year relationships based on final slaughter figures. The farther a dot is from the corresponding bar, the more that year's slaughter deviated from the 11-year norm.

That is why your own judgment is always an essential addition to your forecast. You should adjust the forecast for unusual factors that you think will push the slaughter rate above or below average.

For example, uncommonly hot weather, like that during summer 1980, slows weight gains. A mild and open winter, such as the last one, reduces disease

problems and promotes weight gain. In addition, you have to consider whether large numbers of producers are building up breeding herds, which tends to reduce slaughter, or disposing of some breeding sows, which boosts slaughter rates.

Similar considerations apply if you use the *Hogs and Pigs* reports to try to get an idea of production peaks and valleys during the next 6 months. Each report provides inventory numbers for four weight groups. Slaughter periods for each group are fairly predictable.

If the figures indicate more hogs in a particular weight group than there were in the same group the previous year, marketings in the corresponding slaughter period are also likely to be larger.

For example, the June 1, 1981, inventory showed about 92 percent as many hogs in the under-60-pound weight group as there were on June 1, 1980. Hogs of that weight are usually marketed from October through December. So, slaughter for the last quarter of 1981 is likely to be down about 8 percent from the same period a year before.

Of course, you again have to consider whether the slaughter rate of the previous year should be considered "normal." If the rate was unusually high or low, adjust your forecast accordingly.

Production and Marketing Maneuvers

Given your forecast of slaughter during the next 6 months, plus your estimate of ups and downs in marketings during that period, what adjustments can you make to cut losses or improve profits? If your pigs are gaining at the normal rate and market weight is about 230 to 240 pounds, aren't your hogs already on an inflexible assembly line?

Some specialists say no. They contend that hogs should be marketed above or below the weight generally regarded as standard, depending on cost factors and marketing conditions.

Slaughter Periods For Hog Weight Groups Are Fairly Predictable

June 1 Weights	*Slaughter Period*
180 pounds and over	June
120 to 179 pounds	July into early August
60 to 119 pounds	Early August through September
Under 60 pounds	After September
December 1 Weights	*Slaughter Period*
180 pounds and over	December
120 to 179 pounds	January into early February
60 to 119 pounds	Early February through March
Under 60 pounds	After March

For instance, suppose you forecast larger slaughter and lower prices in the next few months, and you have hogs that you'd normally market then.

These analysts advise marketing at lighter weights to sell ahead of the market downturn. If your operation has the flexibility, you could also sell off young hogs. If you have a corn-hog operation and feed prices are up, you could sell the corn you've grown rather than feeding it.

By the same token, if your forecast shows slaughter decreasing and prices increasing, you may want to hold your hogs past your normal market weight. You might also want to add some feeder pigs to your existing stocks.

Hog Hedging

Another way to use your slaughter forecast is to hedge. In hedging, you use the commodities futures market to lock in an acceptable price well before your hogs go to market.

To some producers, futures may suggest risk and speculation. But automatically feeding hogs to a certain weight and then selling them on the cash market is actually more speculative. Hedging is a strategy for reducing risk, not increasing it.

The most obvious time to hedge is when you think slaughter is likely to increase and prices to decrease. Let's say your hogs won't be ready for 3 months, and you're afraid that prices will be down by then. But you would be satisfied with the futures price now being offered for 3 months ahead.

Through a commodities broker, you might sell a futures contract—an obligation to deliver a specified quantity of hogs at a specified time and price.

Most likely, you won't deliver your own hogs. When the delivery date nears, if prices are down as expected, you offset your contract to sell by obtaining a lower priced contract to buy the same quantity of hogs.

The difference between the sell contract and the buy contract is your profit (minus broker commissions). You then go ahead and sell your own hogs in your usual market. The profit on your futures transaction helps offset the lower cash price.

Another time to hedge, some analysts say, is when you think prices may increase, but you still find current prices acceptable. By hedging at least part of your inventory, you forgo the opportunity for larger profits if prices rise. But you gain some protection in case you're wrong and live prices are actually down when you sell your hogs later on.

Forecasting Further Ahead

While you can make some adjustments in production and marketing plans based on your 6-month slaughter

forecast, your options are limited by the short time span. Clearly, the further ahead you can look, the greater your chances for staying ahead of the market.

The *Hogs and Pigs* reports can again come in handy. Using data on the pig crop likely for the next 6 months—based on producers' intentions for sow farrowings as well as USDA estimates of pigs per litter—you can forecast commercial slaughter during the period between 7 and 12 months away.

Getting the Figures

The forecasting charts in this article are designed for use with the June and December *Hogs and Pigs* reports, which contain statistics for all 50 states. Similar reports are issued in March and September. They cover the 14 major producing states—or about 86 percent of all U.S. hog production.

Each *Hogs and Pigs* report is issued at 3 p.m. on a business day near the 20th of the month. You can get copies of the reports (about a week after they're issued) by writing to the Crop Reporting Board, USDA, Room 5829 South Building, Washington, D.C. 20250. Ask for the reports by name.

To compare your forecasts with actual slaughter figures for previous years—and to check the accuracy of your forecasts in the future—you may also want to request the monthly *Livestock Slaughter* report as well as the *Livestock Slaughter* annual summary report for 1980 and any earlier years that interest you.

Many livestock statistics, including those for your state, are also available by writing or calling your USDA state statistician. Addresses and phone numbers for all state offices are listed in the April 1981 issue of *FARMLINE*.

Going back to the example of the June report, you start with the June-November projected pig crop—43,546,000. Using chart D, locate 43.5 million head along the bottom grid. Then proceed as the dashed line illustrates. (When the December report is issued, you can forecast slaughter for July-December 1982 by using the December-May pig crop projection along with chart C).

The figure you end up with—around 40.8 million—is the commercial slaughter likely for January-June 1982, assuming that marketing trends continue, pigs per litter are the same as usual, and producers follow through on their farrowing intentions.

Of course, intentions tend to reflect prices and other conditions just before producers were surveyed, so actual farrowings may be somewhat different.

It should be evident by now that making your own forecasts—or using someone else's—does not eliminate the uncertainties and risks inherent in your production and marketing decisions. The best you can do is take advantage of the information that's available and remain alert to changing conditions.

The *Hogs and Pigs* reports give all producers access to data that otherwise would be available to only a few analysts. The reports let you see the national picture rather than just the local one, and help you appraise future production, rather than just react to the present and the past. According to Ralph Gann, that's the kind of information a producer should be looking at when planning ahead. □

Price Predictions Are Another Story

Estimating future hog slaughter is helpful, but it's no guarantee that you'll be able to predict price movements.

Several other factors also affect pork prices—supplies of competing meats and changes in consumer incomes, for example. How do they all fit together? Up until early 1980, USDA economists had a pretty good idea, at least at the retail level.

Using price and consumption data for 1953 through 1975, they determined "price flexibility factors" for changes in per capita supplies of beef, broilers, and pork, plus personal income changes.

However, the flexibility factors haven't been working lately. Consumers are behaving differently, and it's showing up in pork price changes that defy the flexibility formula.

Why? USDA's Leland Southard thinks there are at least three causes.

First is the recent economic slowdown, often dubbed "stagflation." Southard says that tight budgets may have forced American consumers to substitute among meats and other protein foods more freely—and also to resist price rises more firmly than in the past.

Second, he says, broiler production has jumped so much in the last few years that it has presented pork producers with a new level of price competition.

Finally, some specialists have theorized that U.S. consumers have a pork saturation point—about 60.5 pounds per person per year (retail weight). If per capita supplies exceed that level, prices fall steeply. And lately, producers have pushed per capita supplies to 63.9 pounds in 1979 and 68.3 in 1980.

REPORTS IN THE NEWS

To order reports: Unless another address is listed, write to ERS Publications, Room 0054-South Building, USDA, Washington, D.C. 20250, or call (202) 447-7255. Please ask for publications by title and report number (in parentheses). Single copies are free, but supplies are limited.

Why Some Farms Fare Better

Tenure and equity seem almost as important as commodity prices in explaining why some farms regularly fare better than others.

In the case of tenure, for example, owner-operated farms often have a big advantage over partly-owned or tenant-run farms because of the owner's potential for capital gains on landownership.

The operator's equity position is another key factor. Obviously, farms where the operators own the land and equipment debt free generally fare better than farms where the operator must make annual interest and principle payments on debts.

The financial strength of farms is based on their ability to generate farm cash receipts (cash flow) to meet all farm expenses, provide an adequate allowance for family living, and set aside a depreciation fund to replace farm machinery and equipment. Farmers who cannot meet these cash flow needs will be unable to continue operating in the long run and will eventually have to forsake farming or supplement their farm income with outside employment.

Cash flow is more important now than in earlier times because farmers rely more on purchased inputs (seed, fertilizer, pesticides). As a result, today's farmers may be less able to endure periods of depressed prices and low cash flow than their predecessors.

While many variables affect a farm's cash flow each year, several generalizations can be made about the role of tenure and equity. USDA analysts recently classified the different tenure-equity combinations in order of greatest to least financial strength.

In the best financial condition are full owners with 100-percent equity. They are usually long-established farmers who own all their land free of debt and all their machinery and livestock.

Also financially sound are part-owners with about 67-percent equity. They rent half the land they farm but have debts equal to only a third of the value of their owned assets—the other half of the land and all their machinery and livestock.

Likewise in good shape are tenants with 50-percent equity. They rent all the land they operate but own all their machinery and livestock with 50-percent indebtedness.

In rather weak financial condition are full owners with 50-percent equity. They represent farmers who have recently expanded or are expanding aggressively. They own all their land, equipment, and livestock, but have outstanding debts equal to half the total value of the farm. Their vulnerability is due to the large and stable cash flow they need to meet their debt repayments.

In the weakest financial shape are tenants with 25-percent equity. They are usually beginning farmers who rent all the land they operate and have debts that amount to three-fourths of the value of their livestock and machinery.

Using computerized simulations of 100 different crop and livestock farms, analysts compared their financial prospects based on these five tenure-equity combinations.

Seventy of the farms were able to generate enough cash to cover all cash flow needs. Of the other 30, only one was a full owner with 100-percent equity. Six were part owners with 67-percent equity, 10 were full owners with 50-percent equity, 6 were tenants with 50-percent equity, and 7 were tenants with 25-percent equity.

Economic Well-Being of Farms (AER-469), *by Harald Jensen, Thomas Hatch, and David Harrington.*

Are Large Farms More Efficient?

Farmers who expand their operations to increase farm income do not necessarily increase technical efficiency or productivity, according to a recent USDA study.

These findings challenge the belief that the larger the farm, the greater the "economies of size." Bigger farms, the reasoning goes, can more efficiently use machinery, labor, and other farm inputs, thus realizing lower costs per unit of production.

However, this study of wheat, feed grain, and cotton farms indicates that as producers increase the size of their operations, per unit costs are lowered initially and then are relatively constant over a wide range of sizes.

For example, average cash costs in the study dropped from 71 cents per dollar of gross income for small farms (annual gross sales of $18,000) to 63 cents for midsize farms (annual gross sales of $59,000). But from midsize farms to large farms (gross sales averaging $133,000), cash costs per dollar of sales were reduced only 2 cents to 61 cents.

The analysts conclude that midsize farms grossing between $41,000 and $76,000 a year achieve most technical cost efficiencies. Even many small field crop farms nearly match the technical efficiency of large farms, they say.

As a result, further growth in midsize as well as large farms will not likely lower the nation's overall food production costs. Many commercial farms already exceed the size necessary to achieve all available cost efficiencies, the study says.

If the problems of small farms can't be traced to inefficiency, why do so many either go out of business, become part-time operations, or expand? The answer, according to the study, is that low-volume production makes it nearly impossible to support a family on farm income alone.

Farmers expand not to improve efficiency, but to raise net farm income through larger production.

Volume discounts on fertilizer and other farm inputs may also provide some incentives for expansion, but the study does not examine the extent to which larger farms benefit from these "market" economies of size.

Instead, it looks at the physical relationships (technical economies) between inputs and outputs. In effect, this provides a measure of the quantity of inputs required to produce a quantity of output for different size farms, assuming all face identical input and product prices.

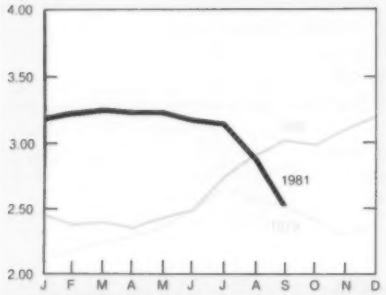
Economies of Size in U.S. Field Crop Farming *(AER-472), by Thomas Miller, Gordon Rodewald, and Robert McElroy.*

FARMLINE TRENDS

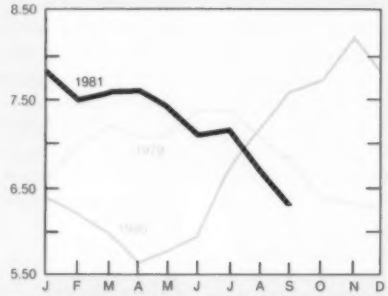
Monthly Price Monitor

Corn and soybean prices dropped sharply in mid-September. Wheat remained stable, with prices still below year-ago levels. Cotton has been falling since April and is now 20¢ below the September 1980 price. After holding at the same level for 3 months, milk prices rose 30¢, while prices for Kansas City Choice feeder steers continued to improve, although they're still at the lowest level in almost 3 years. Omaha barrows and gilts, New York broilers, and Omaha Choice steers all dropped slightly, with only barrows and gilts still above year-ago prices.

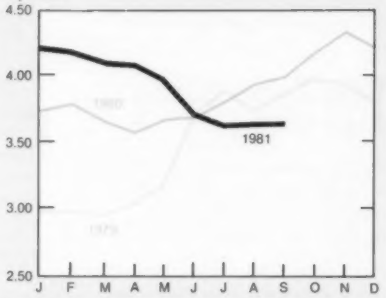
Corn[1]
$ per bu.



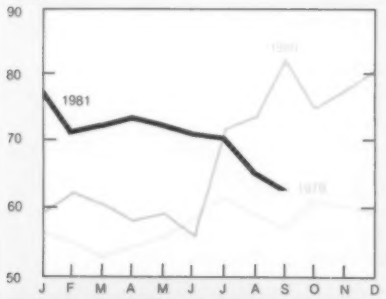
Soybeans[1]
$ per bu.



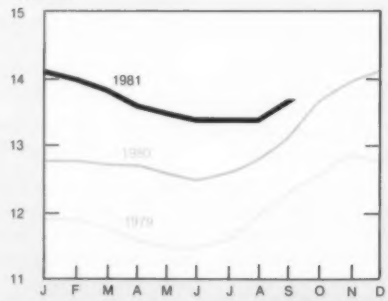
All Wheat[1]
$ per bu.



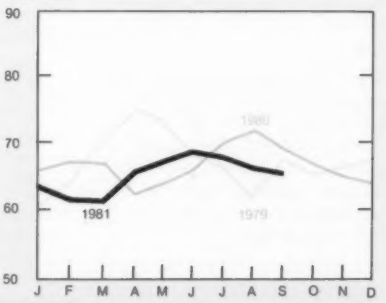
American Upland Cotton[1]
¢ per lb.



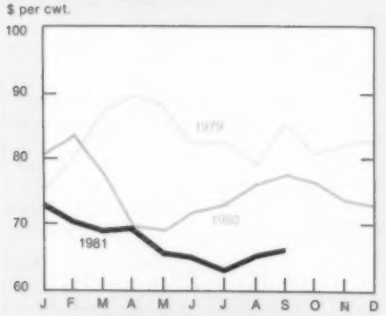
All Milk[1]
$ per cwt.



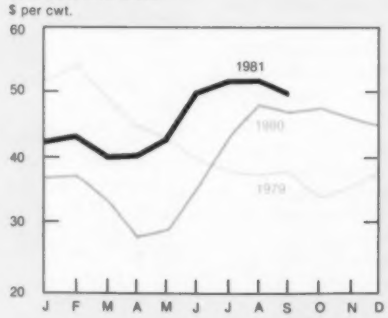
Choice Steers[2]
$ per cwt.



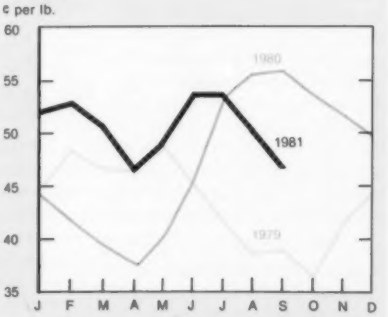
Choice Feeder Steers[3]
$ per cwt.



Barrows and Gilts[2]
$ per cwt.



Broilers[4]
¢ per lb.

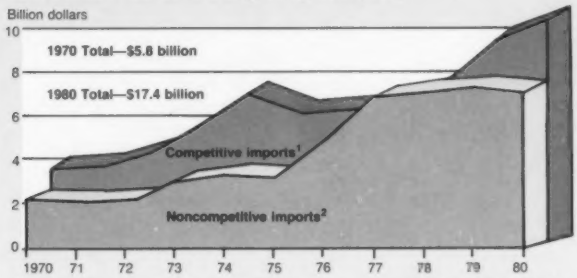


[1]U.S. average prices received by farmers. Prices for the latest month are mid-month averages. [2]Omaha. [3]600-700 lbs., Kansas City. [4]Wholesale, New York.

Foreign Sellers in U.S. Markets

The value of foreign agricultural products reaching U.S. shores has steadily increased in the last decade, reaching $17.4 billion in 1980—87 percent more than in 1975. The increase in competitive products like meat, sugar, and oilseeds was only half the 126-percent increase in noncompetitive products. Imports of competitive products, though, rose faster from 1978 to 1980.

Last Decade Has Seen Sharp Jump in Imports

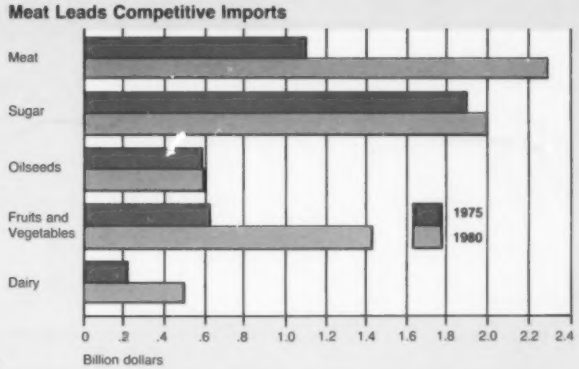


[1]Competitive imports include such commodities as sugar, meats, fruits and vegetables, oilseeds and products, and dairy products.

[2]Noncompetitive imports include such commodities as coffee, rubber, cocoa beans, tea, and spices.

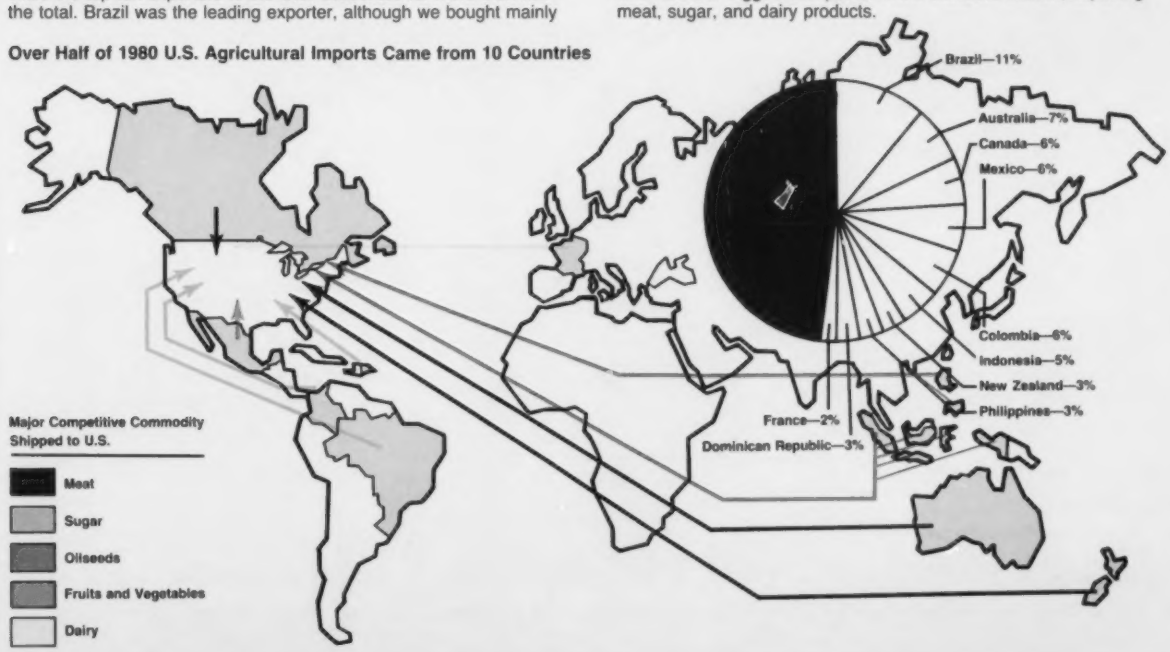
Generally, higher prices were the reason for the 67-percent increase in competitive imports from 1975 to 1980, as volume increased only slightly or decreased for those commodities. Meat was the leader, totaling $2.3 billion in 1980, double that of 1975.

Meat Leads Competitive Imports



Over 90 percent of all agricultural imports came from 50 countries, while the top ten exporters to the U.S. accounted for more than half the total. Brazil was the leading exporter, although we bought mainly noncompetitive products such as coffee and cocoa beans. Australia is U.S. farmers' biggest competitor in the domestic market, exporting meat, sugar, and dairy products.

Over Half of 1980 U.S. Agricultural Imports Came from 10 Countries



U.S. DEPARTMENT OF AGRICULTURE
FARMLINE

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE $300

POSTAGE AND FEES PAID
U.S. DEPARTMENT OF
AGRICULTURE
AGR 101
THIRD CLASS
BULK RATE

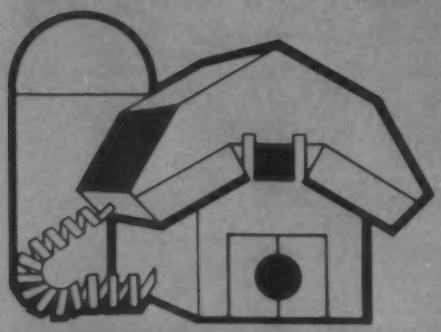
U.S.MAIL

To stop mailing ☐ or to change your address ☐ send mailing label on this magazine and new address to FARMLINE, Rm. 440 GHI, USDA, Washington, D.C. 20250

FRMLNSERIA300SJISSDUE002R 1 *
SERIALS PROCESSING *
UNIV MICROFILMS INTL *
300 N ZEEB RD *
ANN ARBOR MI 48106 *

S

FARMERS' 900



Call the FARMERS'—900—NEWSLINE for the latest U.S. and world crop, livestock, export, and economic news from USDA. A 60-second summary is available to you 7 days a week, 24 hours a day. Your cost is 50 cents per call. The news items and special features are updated at 4 p.m., Washington, D.C. time.

The FARMERS'—900—NEWSLINE keeps you on top of the latest agricultural estimates and analysis from USDA.

NEWSLINE 900-976-0404